Buying a microphone for speech recognition

One of the best ways to increase accuracy for speech recognition is to have the right microphone. Here is a list of the different types of microphones and some information about them.

Built-into the computer/monitor - Microphones built-into computers or computer monitors work for command & control speech recognition, but do not work well for dictation because they are too far away and pick up a lot of noise.

Built-into the keyboard - Microphones built-into keyboards do not work well for speech recognition because they are too far away and pick up a lot of noise.

Clip-on - Clip-on microphones clip onto your shirt, just below your collar. They are not as good as close-talk microphones. Also, the cord sometimes gets in the way.

Close-talk - You wear close-talk microphones on your head so that the microphone is as close to your mouth as possible. These work the best for speech recognition and dictation because they hear only the person speaking and not any background noise. Unfortunately, the cord sometimes gets in the way.

Desktop - Desktop microphones usually rest in a microphone stand. If you keep the microphone pointing towards you and about 6" (15cm) from your mouth, they work well, but only in quiet rooms.

Ear-piece - You wear ear-piece microphones on your head so that the microphone is as close to your mouth as possible. These work well for speech recognition and dictation but not as well as close-talk microphones. Unfortunately, the cord sometimes gets in the way.

Hand-held - Although hand-held microphones pick up very little noise, they are not convenient for most speech recognition purposes because they must be held 4" (10 cm) away from the user's mouth.

Handset – These microphones look like normal telephone handsets, but they plug into the microphone jack rather than the telephone jack. Handsets get good accuracy.

Rest on the computer - Microphones that rest on the computer do not work well for dictation because they are too far away and pick up a lot of noise, but they will work for command and control.

You can buy a microphone from many local electronics and computer stores, or mail-order it. When buying a microphone, you should consider the following:

1 How much are you willing to pay? Very cheap microphones do not provide good recognition accuracy. Although high-priced microphones will get slightly higher accuracy compared to mid-priced microphones, most of the benefit is in additional comfort and noise-resistance.
2 Where will you be using speech recognition? If you are speaking in a quiet room, a close-talk or handset microphone is best, but other types of microphone (e.g. desktop) may also give good results.   However, if you are speaking in a noisy room or a cubicle environment, a close-talk or handset microphone is essential for good performance.
3 Is the microphone comfortable? If you have to wear a microphone, make sure it's comfortable since you may be wearing the microphone for several hours each day.
4 Will the microphone work with your sound card? Not all microphones work with all sound cards. You should refer to your sound card's documentation for a list of compatible microphones. If it doesn't contain a list, then look for microphones specifically designed to be used with computers.

Here is a list of some PC microphone vendors with web sites:

Andrea Electronics – http://www.andreaelectronics.com

Jabra – http://www.jabra.com
Knowles Electronics – http://www.knowlesinc.com/compstuff.htm
Koss – http://www.koss.com
Plantronics – http://www.plantronics.com
Shure – http://www.shure.com
Telex – http://www.telex.com/mac/computeraudio/macaudproducts.htm

Adjust Playback Volume

Make sure your speakers are properly connected:
 1 Make sure your speakers are plugged in.
 2 If your speakers have an on/off switch, make sure they're on.
 3 If your speakers have a mute button, make sure they're not muted.
 4 If your speakers have a volume knob, try turning it to adjust the volume.

If your speakers are properly connected and you still don't hear anything or it's not the right volume, then use the Volume Control applet:
 1 Make sure the main "Volume Control" (all of the way to the left) is not muted.
 2 Adjust the slider up to make it louder, or down to make it quieter. Make sure it is not all the way at the bottom.
 3 Make sure the "Wave" volume slider is not muted.
 4 Adjust the slider up to make it louder, or down to make it quieter. Make sure it is not all the way at the bottom.
 5 If you still don't hear any sound then consult your sound card's manual.

Manually fixing the volume control

This help topic is designed in case the wizard fails, and you must adjust your microphone settings manually.

If you do not already have the "Volume Control" applet running:
1 Double-click the speaker icon in your taskbar.
2 If you don't have one then you need to turn the feature on in the control panel. Double-click the "Multimedia" control panel, and click the "Show volume control on the taskbar." Now double-click the speaker icon in your taskbar.

Once the "Volume Control" applet has appeared:
1 Select the "Options" menu and make sure the "Advanced Controls" menu item is checked. If the menu item is disabled then you don't need to do anything.

Check the playback volume:
1 Select the "Options" menu and then "Properties."
2 In the properties dialog, make sure that the right "Mixer device" is selected. If you don't know which one you're using and there's more than one choice, then you will need to repeat all of the following steps for each "Mixer device."
3 Click on the "Playback" radio button. Make sure that all of the check-boxes in the "Show the following volume controls" list box are checked.
4 Press "OK."
5 Look at the first vertical slider for the volume control. It's usually called "Volume Control." Make sure that the slider is not all the way at the bottom, and that "Mute" is not checked.
6 Find the slider named "Wave," or "Wave Out." Make sure that the slider is someplace near the middle or above, and that "Mute" is not checked.
7 If there's a slider named "Microphone" then make sure that the slider **is set to the bottom**, and that **it is muted**. If you don't do this you might hear a loud whining when speech recognition starts listening.

Check the recording volume:
1 Select the "Options" menu and then "Properties."
2 In the properties dialog, make sure that the right "Mixer device" is selected. If you don't know which one you're using and there's more than one choice, then you will need to repeat all of the following steps for each "Mixer device."
3 Click on the "Recording" radio button. Make sure that all of the check-boxes in the "Show the following volume controls" list box are checked.
4 Press "OK."
5 Find the slider named "Microphone." Make sure the slider is someplace near the middle and that the checkbox is selected.
6 Make sure the check-boxes on the other sliders are not selected, or speech recognition may recognize from your CD-player, etc.
7 If there's an "Advanced" button under the "Microphone" slider then click it. A dialog will pop up. If the dialog has options for "Automatic gain" then you should make sure they're checked and press OK. Most sound cards need these checked, although if your microphone volume is too loud you may need to come back later and turn them off.

Check the "other" volume:
1 Select the "Options" menu and then "Properties."
2 In the properties dialog, make sure that the right "Mixer device" is selected. If you don't know which one you're using and there's more than one choice then you will need to repeat all of the following steps for each "Mixer device."
3 Click on the "Other" radio button. Make sure that all of the check-boxes in the "Show the following volume controls" list box are checked. If the "Other" radio is button is disabled then don't do the next steps in this section.
4 Press "OK."

5 Find the slider named "Microphone." Make sure the slider is someplace near the middle and that the checkbox is selected.
6 Make sure the check-boxes on the other sliders are not selected, or speech recognition may recognize from your CD-player, etc.
7 If there's an "Advanced" button under the "Microphone" slider then click it. A dialog will pop up. If the dialog has options for "Automatic gain" then you should make sure they're checked and press OK. Most sound cards need these checked, although if your microphone volume is too loud you may need to come back later and turn them off.

You should test the settings by returning to the Microphone Setup Wizard. You may wish to manipulate the volume controls while the Microphone Setup Wizard in the "Make sure the microphone is working" pane so you can see the effects of manipulating the mixer.

Not Yet Implemented

Not yet implemented.